

## A 16 a - Coffee Test

### **GEA Niro Method No. A 16 a**

Revised: September 2005

#### **1. Definition**

The thermostability in an acid environment is expressed by the number of white particles on the surface after reconstituting the powder in hot coffee.

#### **2. Scope**

The method can be used for coffee creamers and milk powders.

#### **3. Principle**

The protein stability of powders used for hot beverages is analyzed by adding the powder to hot coffee and determining whether there are flocculated particles on the surface.

#### **4. Apparatus**

1. Balance, sensitivity  $\pm 0.01$  g
2. pH-meter, capable of reading  $\pm 0.2$  pH
3. 250 ml beaker
4. Teaspoon
5. Weighing dish, polystyrene
6. Stop watch
7. Electrical kettle or hot plate
8. Thermometer, 0-100°C  $\pm 0.5$ °C.

#### **5. Reagents**

1. Standard instant coffee (Nescafé extra or similar).
2. Deionized water.

#### **6. Procedure**

1. Weigh  $1.5 \pm 0.01$  g of coffee into the 250 ml beaker.
2. Weigh  $5.0 \pm 0.1$  g of powder into the weighing dish.
3. Boil approx. 200 ml of water and measure 150 ml into the 250 ml beaker containing the coffee.  
Check that the solution has a pH of 4.9-5.4 and adjust the pH with base or acid if it is out of range.

4. When the temperature of the coffee has cooled to  $80^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ , tip in the 5 g of powder.  
When all powder is wetted, start the stop watch and stir with a teaspoon for 30 seconds.
5. The procedure should be carried out in duplicate.

**7. Result**

Record 0 as passed - if 2 determinations show no particles on the surface.

Record 1 as failed - if 2 determinations show particles on the surface.

**8. Reproducibility**

N/A

**9. Remarks**

The results can also be given with information expressing number of particles on the surface.

**10. Reference**

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